The Air National Guard's

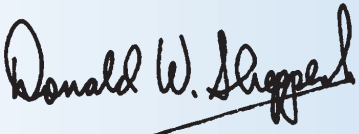
Commitment to Clean Air

Air National Guard
Environmental Policy Statement

The Earth we walk, the air we breathe and the water we drink are the sustenance of all living things. It is our moral obligation – personally and collectively – to ensure that we are good stewards of the environment; it is also our legal responsibility.

The Air National Guard must and will operate in an environmentally safe and responsible manner, while sustaining readiness levels that will allow us to meet our global missions.

Ultimately, our success or failure depends on the actions of each individual in the Air National Guard – a success or failure that will be measured in the court of public opinion.



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Contents

Introduction

Activities throughout the world can affect air quality. Everyone wants the air we breathe to be pure and clean. How does the Air National Guard (ANG) improve air quality?

One way is through compliance with air quality requirements outlined in federal and state laws and regulations. Over the last three decades, Congress has passed various laws to help protect the quality of air that we breathe. These laws regulate many different types of air pollution sources, such as motor vehicles, refrigerants, cleaning and painting operations and factories.

Congress passed the first Clean Air Act (CAA) in 1963. Over the years, this law has evolved to include more air quality rules. These new changes include programs to reduce substances released into the air and improve air quality. We know the most recent changes as the Clean Air Act Amendments (CAAA) of 1990. The CAAA added provisions relating to mobile sources, air toxics, preconstruction permits, ozone depleting substances and major sources permits (Title V permits) to name the most significant changes.

The Title V permitting program, which is the focus of this brochure, requires facilities with potential emissions greater than certain major source thresholds set by law to apply for a federal operating permit. These facilities may also have to obtain state operating permits in addition to Title V permits. States have been delegated to carry out the federal permitting program. This new permit system is one of the most important changes in the CAAA.

The men and women of the ANG are committed to trying to preserve air quality at their facilities throughout the United States. As required by the CAAA, ANG facilities must prove that their emissions are within the standards prescribed by law.

As you review this brochure, you will find out that the ANG fulfills the CAAA requirements. It:

- Monitors air quality at ANG installations.
- Uses state-of-the-art technologies.
- Encourages your participation in the permitting process.

Typical Air Pollutant Sources Found at Our Facilities

Heat/Steam/Energy Production
- Package boilers
- Diesel generators
- Emergency generators
- Peak shaving generators

Firing Ranges
- Air to ground munitions
- Small caliber weapons

Fuel Storage and Dispensing Operations
- Aboveground storage tanks
- Underground storage tanks
- Gasoline service stations
- Tanker truck loading racks

Sandblasting Operations

Restoration/Remediation Activities
- Packed column air strippers
- Soil venting
- Soil incineration
- Soil/water bioremediation

Fire Training

Organic Solvent Applications
- Vapor degreasers
- Solvent dip tanks
- Metal parts washing basins
- Paint stripping
- Pesticide/herbicide applications

Surface Coating Applications
- Paint booths

Woodworking Operations
- Furniture refinishings
- Architectural coatings
- Traffic striping

Photoprocessing Operations

Monitoring Air Quality

The CAA regulates the release of pollutants into the air. Sources are monitored to ensure their operations meet these regulated acceptable levels. By following these requirements, the ANG improves air quality.

Air Pollution

Air pollution is the presence of one or more air contaminants (such as dust, fumes, gas, mist, odor, smoke or vapor) in the outdoor atmosphere. To be a pollutant, the substance must be in sufficient quantities for a certain amount of time and have the characteristics to threaten the health of human, plant, or animal life or the safety of property. A substance in the air that reasonably interferes with the comfortable enjoyment of life and property is also considered a pollutant. Usually pollution from human activities, such as manufacturing and use of motor vehicles, is greater than the contribution from natural sources, such as forest fires and decay of organic materials.

Emissions (gas-borne pollutants) are either vapors that are the gaseous phase of liquids or solids or fumes that are microscopic solid particles such as metallic oxides (zinc and lead oxides) formed by the condensation of vapors of solid materials.

Sources

Most people commonly think of sources as smokestacks or automobiles. However, on ANG bases, other sources exist.

Jet engine testing is a common source of air pollution. Cleaning solvents, electronic parts cleaning, lubricant and spray cleaners and common housekeeping supplies are also considered sources. Other minor emissions could come from fire training pits and fuel spills. Fuel handling and painting of vehicles and planes may result in significant releases of vapors, known as volatile organic compounds.

Each state determines which of these activities requires an individual operating permit or an all-inclusive major source operating permit when required by federal law. The ANG must also obtain construction permits to increase or reduce existing sources or build new sources. State operating permits are renewed periodically as required by each state's law, whereas the federal government requires Title V permits to be renewed every five years or whenever it is significantly modified. Annually, the ANG pays approximately $100,000 in administrative fees to the state's regulatory agencies to fund these permit programs.

Criteria Pollutants

PM10 is composed of solid particles, at 10 microns (.000010 meter) in diameter or less, which are small enough to be inhaled by humans. The particles can be composed of any number of compounds, from road dust to heavy metals, depending on the source. These particles are invisible to the naked eye.

Sulfur dioxide (SO_2) is a compound formed both naturally and by the combustion of fossil fuels. Exposure to higher concentrations of SO_2 can cause respiratory problems for some people. When combined with water, SO_2 forms sulfur compounds that are one of the main components of acid rain.

Nitrogen dioxide (NO_2) is another compound formed by the combustion of fossil fuel which contributes to the formation of both acid rain and smog. NO_2 is one of several nitrogen oxide compounds present in the atmosphere.

Ozone itself is not emitted directly into the air, but rather is formed through a series of complex physical and chemical reactions in the atmosphere. Discussions about ozone focus on a group of gaseous pollutants known as volatile organic compounds. Volatile organic compounds are carbon-based organic compounds that tend to evaporate into the air easily. Solvents, cleaners and paints are among the hundreds of compounds in use that contain volatile organic compounds. In the presence of sunlight, volatile organic compounds and other chemical compounds, including nitrogen oxide, react to form ozone.

Carbon monoxide (CO) is a colorless, odorless and tasteless gas that occurs naturally in the atmosphere and is also formed in the combustion of fossil fuel.

Lead (Pb) is a common metal that is released into the atmosphere from a number of sources, including burning of leaded fuels.

Monitoring Air Quality

Criteria Pollutants

The U.S. Environmental Protection Agency (US EPA) identified six substances in the air that we must monitor. They call these substances criteria pollutants. Testing the air for these criteria pollutants is done near ground-level at various locations across the United States.

The six criteria pollutants are:

- Small Particulate Matter (at 10 microns in diameter or less, called PM10),
- Sulfur Dioxide,
- Nitrogen Dioxide,
- Ozone,
- Carbon Monoxide, and
- Lead.

Acceptable Pollutant Levels

The US EPA has developed acceptable levels for each of these six substances, known as the National Ambient Air Quality Standards (NAAQS). The acceptable levels are the maximum amounts or threshold levels of any of these pollutants in the air. If one of these criteria pollutants is found in a higher amount than acceptable levels, this may cause adverse health effects to humans or harm the environment.

By continually monitoring the ground-level air, the US EPA has identified areas of the country that meet these acceptable levels. They call these locations attainment areas. Those locations of the country that were higher than acceptable levels for one pollutant or more are called nonattainment areas. The US EPA identifies each area of the country as an attainment or nonattainment area for each pollutant. For example, a region in the state of California may be an attainment area for lead, but a nonattainment area for ozone and carbon monoxide.

Each of the ANG facilities follows the CAA rules based on whether it is in an attainment or nonattainment area.

Clean Air Act Enforcement

Each state may enforce provisions of the CAA. However, the US EPA also retains enforcement authority. State and local air pollution districts develop State Implementation Plans using federal rules as the basis. The US EPA reviews the plan to decide if it adequately protects air quality. If so, the plan is approved and becomes legally binding under state and federal law.

Keep in mind that state air quality regulations and requirements may be more demanding than federal requirements. In fact, it is up to each individual state to identify state-specific air quality issues. The state then develops air quality regulations that are at least as stringent as federal regulations to address these issues.

The ANG is dedicated to following

New Technologies

To fully comply with Title V of the CAAA requirements, the ANG has implemented new technologies and procedures to improve air quality.

Elimination of Ozone Depleting Substances

Ozone depleting chemicals, such as Freons and Halons, are being phased out and replaced with environmentally-safe substances.

High-Volume Low-Pressure Paint Spray Guns

Paint spray guns are designed to improve paint transfer efficiency up to 60% and reduce overspray and waste.

Enclosed System for Paint Spray Gun Cleaning

The enclosed system, very much like a dishwasher, prevents the escape of solvent vapors into the atmosphere as it cleans the paint spray guns and accessories.

High Efficiency Paint Booth Filters

The high efficiency paint booth filters operate with a 99% efficiency and prevent the discharge of harmful paint solids into the atmosphere.

Enclosed Plastic Media Blasting Equipment

Plastic media bead blasting offers the advantage of being recyclable up to seven times. Also, the system has high filtration efficiency preventing release of harmful dust and particulates into the atmosphere.

Fuel Conversion

The fuel used for aircraft and most ground equipment generators is being changed. Because of the extremely low volatility (ability to convert into a vapor or a gas) of jet petroleum fuel number 8 (JP-8), approximately 95% of volatile organic compound emissions have been eliminated.

Alternate Fuel Vehicles

Older vehicles are being phased out and gradually being replaced by more efficient vehicles, and by electrical and other alternate-fuel vehicles.

Elimination of Coal-Fired Boilers

Replacement of coal-fired burners with natural gas has helped eliminate hundreds of tons of air pollutants. Projects are underway to eliminate the remaining coal-fired boilers by the middle of 1997.

Conversion to Water-Based Solvents and Paints

Water-based solvents and paints, along with other non-petroleum cleaning products, have eliminated approximately 50% of all volatile organic compound emissions.

Introduction of the Pharmacy Concept

The pharmacy concept is a new Department of Defense initiative adopted at many bases around the country. The pharmacy functions just like a pharmacy in your neighborhood. Solvents, paints, cleaners and other chemicals are dispensed to the users only by a signed request of the shop supervisor. This concept eliminates waste, excess stock and unnecessary use of chemicals.

Jet Engines

Inefficient jet engines are gradually being replaced with newer and more efficient ones. This will reduce fuel consumption and emissions of criteria pollutants.

the spirit and intent of the CAA. Policies and procedures have been developed to ensure compliance with all applicable CAA requirements.

Policies and Procedures

The ANG has adopted policies and procedures regarding operations at their bases. For significant stationary sources, the ANG will:

- Show how the existing or proposed air pollution sources affect ambient air quality and obtain necessary permits.
- Maintain current air emissions inventory.
- Build and operate existing and new sources according to US EPA requirements or more stringent state or local requirements.
- Bring existing sources into compliance with current federal, state and local standards.
- Minimize releases into the atmosphere.
- Control open burning for firefighter training.
- Properly dispose of substances or compounds collected by air pollution control equipment.

For mobile sources, the ANG will:

- Equip all vehicle fueling facilities in the United States with unleaded gasoline and proper fueling equipment.
- Follow vehicle inspection and maintenance regulations.
- Develop and use fuel efficiency programs such as car pooling.
- Obey all monitoring and record keeping requirements.
- Use alternative fuels when feasible.

Participating in the Process

The ANG encourages your participation in the permitting process.

The Application Process

As stated earlier, the CAAA require that all federal facilities throughout the United States are evaluated for permitting purposes. To complete the application, ANG personnel identify all source emissions and compare them with the regulated emission levels. The permit application includes procedures for facility record keeping, emission levels to be maintained and the methods for showing compliance. The completed application is filed with the state for review and approval.

Public Participation

When the state receives a permit application, the public has a role in ensuring that the requirements of the CAA are met. The CAAA of 1990 require public participation in the permitting process. Each state will provide public announcements for formal comment periods. You are encouraged to attend any public hearings on draft permits and revisions.

The state will publish a notice for public comment in your community newspapers to ensure you know about any permit applications in your area.

The notice will include items such as:

- The installation or facility and its type of sources,
- The name and address of the organization requesting the permit,
- The name and address of the organization that will process the permit application,
- The activities involved in the permit action,
- The change in release levels if it is a permit modification,
- The time and place of any hearing, and
- The name, address and telephone number of a person from whom interested persons may obtain additional information.

The public comment period usually lasts 30 days. You will have 30-day notice for any public hearing. Records of public comments and issues raised during the public participation process will be kept and made available to the public.

To get additional information or to get on your state's mailing list, call your local regulatory agency.

For Additional Information

Remember, the ANG fulfills the CAAA requirements. It:

- Monitors air quality at ANG installations.
- Uses state-of-the-art technologies.
- Encourages your participation in the permitting process.

For more information about the ANG's Title V permitting program and the CAAA of 1990, please contact:

Air National Guard Readiness Center
Environmental Compliance Branch
(ANGRC/CEVC)
3500 Fetchet Avenue
Andrews Air Force Base, Maryland
20762-5157
Telephone: (301) 836-8293

or

National Guard Bureau
Office of Public Affairs
Environmental Programs Branch
4501 Ford Avenue
Suite 450
Alexandria, Virginia 22302-1454
Telephone: (800) 252-8959 or
(703) 681-0700

Glossary

Ambient
Surrounding on all sides.

Attainment
The term that describes the air quality in areas of the country where pollution concentrations are lower than the National Ambient Air Quality Standards. Major emission sources in attainment areas are subject to the Prevention of Significant Deterioration rules.

Carbon monoxide
One of the six criteria pollutants for which the U.S. Environmental Protection Agency has established National Ambient Air Quality Standards.

Criteria pollutants
Compounds for which the U.S. Environmental Protection Agency has established National Ambient Air Quality Standards.

Emission
Substances released into the air.

Hazardous Air Pollutant
Under the Clean Air Act Amendments of 1990, any one of 189 listed compounds routinely released into the air.

Lead
One of the six criteria pollutants for which the U.S. Environmental Protection Agency has established National Ambient Air Quality Standards.

Major source
A source is considered a major source when the potential emissions of any criteria pollutant or any Hazardous Air Pollutant exceed the set threshold for that pollutant.

National Ambient Air Quality Standards
A concentration of a pollutant in the air at ground level, established by the U.S. Environmental Protection Agency as protective of the public health and welfare.

Nitrogen dioxide
One of the six criteria pollutants for which the U.S. Environmental Protection Agency has established National Ambient Air Quality Standards. NO_2 is one of several common nitrogen oxide compounds found in the air.

Glossary

Nitrogen oxides
The term to describe the series of nitrogen oxide compounds in the air that contribute to smog and acid rain.

Nonattainment
The term that describes the air quality in areas of the country where pollution concentrations are greater than National Ambient Air Quality Standards.

Ozone
One of the six criteria pollutants for which the U.S. Environmental Protection Agency has established National Ambient Air Quality Standards. Ozone near the ground is a major contributor to smog conditions found in cities.

Particulate Matter
The general term for any type of particle releases.

Particulate Matter 10
One of the six criteria pollutants for which the U.S. Environmental Protection Agency has established National Ambient Air Quality Standards. The particles included in the definition of PM10 are those small enough (less than 10 microns in diameter) to be inhaled by humans.

Sulfur dioxide
One of the six criteria pollutants for which the U.S. Environmental Protection Agency has established National Ambient Air Quality Standards. Sulfur dioxide releases result from natural sources and from burning fossil fuels. Sulfur dioxide contributes to acid rain and can cause respiratory problems.

Source
Any process, operation, piece of equipment or activity that causes the release of pollutants into the air.

State Implementation Plan
The document created by each state to establish each state's program for maintaining good air quality in attainment areas and improving air quality in nonattainment areas.

Volatile organic compound (VOC)
A wide range of organic compounds, common to solvents and paints, that add to ozone and smog formation.